INSTRUCTIONS TO CANDIDATES

- Answer all questions.

- This paper carries a total of 20 marks.

- Calculators and protractors are NOT ALLOWED.
<table>
<thead>
<tr>
<th>No.</th>
<th>Question</th>
<th>Space for working if required</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>One of these numbers is a prime number. Which one is it?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A) 2065   B) 3434   C) 591   D) 31</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Answer: _________</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Solve: $2x - 15 = 5$</td>
<td>Answer: __________</td>
</tr>
<tr>
<td>3.</td>
<td>What is the area of the triangle? (Each square is 1 cm by 1 cm.)</td>
<td>Answer: _________ cm$^2$</td>
</tr>
<tr>
<td></td>
<td><img src="image.png" alt="Diagram" /></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Work out the mean of the following numbers:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>12  12  12  22  12</td>
<td>Answer: ___________________</td>
</tr>
<tr>
<td>5.</td>
<td>Write down the largest number:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A) 0.0132   B) 0.0092   C) $\frac{1}{2}$   D) $\frac{1}{10}$</td>
<td>Answer: __________</td>
</tr>
<tr>
<td>6.</td>
<td>A mobile costs four times as much as a calculator. Deborah buys a calculator costing €21.50. How much does a mobile cost?</td>
<td>Answer: €_______</td>
</tr>
<tr>
<td>7.</td>
<td>Work out $-1234 - 66 + 100 = _________</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Work out 20% of 150.</td>
<td>Answer: __________</td>
</tr>
</tbody>
</table>
9. Write down the area of the following parallelogram:

\[
\text{Answer: } \ __________ \text{ cm}^2
\]

10. An estimation of the circumference of a circle of **diameter** 8 cm is

A) 14 cm²  B) 52 cm²  C) 25 cm²  D) 10 cm²

\[
\text{Answer: } \ __________
\]

11. A book costs €43.75. What change will I get if I pay with a €50 note?

\[
\text{Answer: } \ €______
\]

12. Find the size of x:

\[
\text{Answer: } \ _____ \ ^\circ
\]

13. Write down the output of this number machine in the empty box.

\[
\text{Input} \quad 32.4 \quad \div \quad 4 \quad \times \quad 2 \quad \text{Output}
\]

14. If \( y = 5x + 2z \), find \( y \) when \( x = 3 \) and \( z = -2 \).

\[
\text{\( y = \ __________ \)}
\]
15. I have 6 gold and 3 silver rings in my pocket. I pick one at random. What is the probability that I pick a gold ring?

Answer: __________

16. The turtle starts from the position shown. Sketch the figure drawn by the turtle for this set of LOGO commands:

`PD RT 45 FD 100 RT 90 FD 100 LT 90 FD 100`

17. The perimeter of the quadrilateral is 75 cm. What is the value of $x$?

Answer: ________ cm

18. Simplify:

$5p - 2q - 2p + 3q + 1 = __________$

19. The table below shows the amount of rainfall in centimetres:

<table>
<thead>
<tr>
<th></th>
<th>May</th>
<th>June</th>
<th>July</th>
<th>August</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain</td>
<td>5</td>
<td>3</td>
<td>2</td>
<td>4</td>
</tr>
</tbody>
</table>

Complete the bar graph.

20. One of the following lines is a line of symmetry. Which one is it?

A) AB
B) MN
C) PQ
D) GH

Answer: ________
1. (a) Work out the following correct to two decimal places:
   \[375.586 - 227.281\]
   Answer: ___________  
   (b) Work out the following correct to the nearest 100:
   \[8254 + 1791\]
   Answer: ___________
   (4 marks)

2. (a) Simplify the ratios
   (i) \[8 : 28 : 4\]
   Answer: ___________
   (ii) \[30 : 45\]
   Answer: ___________
   (b) €180 is shared in the ratio 1 : 2. Find the largest share.
   Answer: €__________
   (4 marks)
3. Given that \( p = 3q^2 - r^2 \)
   
   (a) Calculate the value of \( p \) when \( q = 2, r = -1 \).
   
   Answer: \( ________ \)
   
   (b) Calculate the value of \( p \) when \( q = -2, r = 3 \).
   
   Answer: \( ________ \)
   
   (4 marks)

4. Each one of the shaded parts is a quarter of a circle.
   
   (a) Work the perimeter of one shaded part correct to two decimal places. \((C = 2\pi r)\)
   
   Answer: \( ________ \) m
   
   (b) Work out the area of the white cross.
   
   Answer: \( ________ \) m\(^2\)
   
   (6 marks)

5. (a) Work out the area of the parallelogram ABCD correct to two decimal places.
   
   Answer: \( ________ \) cm\(^2\)
   
   (5 marks)
   
   (b) Work out the area of the triangle ADE correct to two decimal places.
   
   Answer: \( ________ \) cm\(^2\)
   
   (5 marks)
6. Calculate the value of angles \( w, x, y \) and \( z \).

\[
\begin{align*}
\theta_1 & = 62^\circ \\
\theta_2 & = 49^\circ \\
\theta_3 & = 49^\circ \\
\theta_4 & = 30^\circ
\end{align*}
\]

\( w = \quad \quad ^\circ \quad x = \quad \quad ^\circ \) \\
\( y = \quad \quad ^\circ \quad z = \quad \quad ^\circ \) \\

(5 marks)

7. (a) A motor boat costs €8500 \textbf{without} VAT. The VAT rate is 18%. Find the VAT payable on the boat.

Answer: €

(b) Fill in:

<table>
<thead>
<tr>
<th>%</th>
<th>Fraction</th>
<th>Decimal</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>\frac{3}{5}</td>
<td></td>
</tr>
</tbody>
</table>

(c) I buy a car costing €7500. I pay equal sums each month for a year. How much do I pay each month?

Answer: €

(6 marks)
8. (a) Work out \(\frac{2}{3}\) of 33.63 m. (Give your answer in centimetres.)

Answer: \(\underline{\phantom{0}} \phantom{\text{cm}}\)

(b) Change 6703 g into kilograms.

Answer: \(\underline{\phantom{0}} \phantom{\text{kg}}\)  

(4 marks)

9. Theo works in an office. He is paid at the rate of €10.50 an hour on weekdays and €15.50 an hour on Saturdays. He normally works for 42 hours on weekdays only.

(a) How much does he earn in a normal week?

Answer: \(\underline{\phantom{0}} \underline{\phantom{0}} \underline{\phantom{0}} \underline{\phantom{0}}\)  

(b) If he works a normal week and 4 hours on Saturday, how much will he earn?

Answer: \(\underline{\phantom{0}} \underline{\phantom{0}} \underline{\phantom{0}} \underline{\phantom{0}}\)  

(4 marks)

10. Solve the equations:

(a) \(5x - 6 = 2x\)

Answer: \(x = \underline{\phantom{0}}\)

(b) \(2x - 3 = 3x - 8\)

Answer: \(x = \underline{\phantom{0}}\)  

(6 marks)
11. (a) Work out the area of triangle ABD.

Answer: _______ cm²

(b) The area of triangle BCD is half that of triangle ABD.

Tick the right value of x:

3 cm  7 cm  10 cm  2 cm

(c) AD = BC = 10.59 cm. Work out the perimeter of the shape ABCD correct to one decimal place.

Answer: _____________ cm

(5 marks)

12. (a) Which of the shapes shown below are prisms?

Tick the correct answers in the boxes provided.

(b) Write down the first four square numbers on the lines provided.

____  ____  ____  ____

(4 marks)
13. The manager of a hotel has collected the following data on the nationality of the guests in his hotel:

<table>
<thead>
<tr>
<th>Nationality</th>
<th>British</th>
<th>Italians</th>
<th>French</th>
<th>Germans</th>
<th>Belgians</th>
<th>Polish</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Guests</td>
<td>110</td>
<td>55</td>
<td>45</td>
<td>70</td>
<td>30</td>
<td>20</td>
</tr>
</tbody>
</table>

(a) Use the table to complete the bar chart.

(b) What is the total number of guests in the hotel?

Answer: __________

(c) A guest is chosen at random. What is the probability that the guest is British? Express this probability in its simplest form.

Answer: __________

(d) What is the ratio of Italians to Germans? Express the ratio in its simplest form.

Answer: _____ : ______

(8 marks)
14. (a) Complete the following number machines.

\[
\begin{array}{c}
\text{Input } x \\
-3 \\
\times 2 \\
\text{Output } y \\
\end{array}
\quad \begin{array}{c}
\times 2 \\
+1 \\
\end{array}
\]

(b) Use your results in part (a) to complete the following pairs of coordinates:

\((-3, \_\_), \ (2, \_\_).\)

(c) Draw the line passing through these two points.

(d) Use your graph to complete the following pairs of coordinates:

\((-2, \_\_), \ (1, \_\_).\)
The diagram shows the tiles on the floor of a yard.

(a) Make the pattern symmetrical about the lines AB and XY by marking three tiles with a black circle.

(b) Is there another line of symmetry? Write YES or NO.

Answer: __________

(c) A stone falls at random on the floor shown. What is the probability that it will land on a black tile?

Answer: ___________

(7 marks)

End of Paper